Wissenschaftszentrum Nordrhein-Westfalen
Institut Arbeit und Technik
Kulturwissenschaftliches Institut
Wuppertal Institut für Klima, Umwelt, Energie GmbH

Wolfgang Sachs

Post-Fossil Development Patterns in the North
A Contribution to the IPCC

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1. On the particular responsibility of the North

At the outset, it is worth recalling the first principle of the United Nations Framework Convention on Climate Change as signed in Rio de Janeiro in 1992. It reads as follows: „The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof." (Art. 3, 1)

Under the FCCC, developed countries are requested to take the lead in combating climate change. The text offers no explicit justification, but it is not difficult to identify four different reasons for this clause. First, industrialized countries are responsible for the bulk of carbon dioxide emissions accumulated in the past; about 83% of the rise in cumulative emissions since 1800 has been caused by developed countries (Loske 1996). Second, in 1996 developed countries were responsible for 61.5% (UNDP 1998, 202) of global carbon dioxide emissions. The fact that a dramatic rise in emissions is presently occurring in newly industrializing countries does not basically change this picture. Third, the adverse effects of global warming are going to be distributed unequally between North and South; those who cause the problem are - in relative terms - likely to be the winners, and those who have been the bystanders are likely to be the victims. Fourth, developed countries possess more capabilities for responding to climate change, at least with regard to financial resources and technical ingenuity. However, whether their capability for adaptation includes the capability for institutional reform and cultural change as well, remains to be seen.

The rest of the paper will therefore attempt to highlight patterns of development which could gradually transform Northern societies into low-emission countries. At the beginning, a conceptual framework for discussing sustainability in the North will be presented. Then, „resource productivity" is identified as the critical factor in such a transition. And finally, two wide-ranging strategies are sketched out which may take industrial countries into a post-fossil-fuel age.

2. The environmental space concept

Anthropogenic climate change is part and parcel of the secular drift towards an unsustainable world, and carbon-reducing energy strategies is in turn one of the most important levers humankind has for creating a sustainable world (Reddy et al. 1997). Against this background, it makes little sense to pursue climate change and sustainable development as largely separate discourses (Cohen et al. 1998). Instead, climate policy should be viewed as an integral part of the transition to sustainability. This nexus is most compelling for industrialized countries, because - as Agenda 21 states - „the major cause of the continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in industrialized countries“ (Ch.4.3).

Sustainable development, however, is not an operational concept; it is rather - very much like peace or democracy - a guiding idea for the development of societies. As an idea, it contains two major aspirations which have been foundational for the formation of the concept in the last twenty years. These are, first, the aspiration that humanity should become capable of respecting the finiteness of the biosphere and, second, the aspiration that the recognition of global bio-physical limits should not preclude the search for greater justice in the world. Both the concern for ecology and the concern for equity are constitutive for the idea of sustainable development; the concept of environmental space is a tool to integrate both concerns into one, possibly even quantitative, framework (Opschoor 1992, Buitenkamp et al. 1992, Carley - Spapens 1998, Sachs et al.1998).

With regard to ecology, the environmental space concept builds on the industrial metabolism approach. This approach focuses on the flow of materials and energy in modern industrial society through the chain of extraction, production, consumption and disposal (Ayres-Simonis 1992, Schmidt-Bleek 1994, Fischer-Kowalski et al.1997, Opschoor 1997). It argues that, on a general level, the pressure the human economy exerts on the environment depends on levels and patterns of these flows between the economy and the biosphere. Material flows are made up of two types: the materials or input side (including energy) and the waste stream or the environmental output side. Both types of flows are in the long run linked by the law of conservation of matter; the waste/emissions stream will be approximately equal in scale to the material input flow. Within this conceptual framework, sustainability requires to reduce the overall level of resource flows, in particular the primary flow of materials and energy on the input side. The limiting condition for the scale of resource throughput is the globally available, multi-dimensional environmental space. The size of this space is a function of the carrying capacities of eco-systems, the recuperative efficiency of natural resources, and the availability of raw materials. From this standpoint, sustainability implies that humanity keeps the utilization of nature within the (flexible) boundaries of global environmental space. However, since some of these boundaries can never be reliably identified beforehand, it is a matter of foresight and precaution to embark upon a path of reducing resource volumes.

With regard to equity, the environmental space concept addresses the enormous inequality in resource use on a global scale by postulating the parity principle for defining entitlements to the use of resources. This principle suggests that all human beings should have an equal right to the world's resources, in particular the global commons (Agarwal-Narain 1991, Grubb 1995). This rule, however, need not be taken as a planning guideline for planetary redistribution. It can also be viewed as a regulative principle which should guide the self-reflexive conduct of societies. In a free adaptation of Kant's categorical imperative, a society can only be called sustainable when the maxims underlying its conduct could in principle be followed by all others. Following both types of criteria, the environmental space available to a particular industrial country should be seen as limited by both ecological constraints and considerations of justice.

Taking both constraints together, industrial economies may have to reduce the level of resource flow they mobilise at present by a factor of ten within the coming 40-50 years (Schmidt-Bleek 1994, Factor 10 Club 1995, McLaren et al. 1997). This figure, to be sure, represents a very rough indicator, not applicable to all environmental dimensions and to every country, but it nevertheless suggests an order of magnitude for the changes involved in the transition to sustainability - when normatively defined. Climate change can serve as an illustration (Sachs et al. 1998, 30). With the world population in 1994 (5.8 billion) and levels of CO2 emissions (29 billion tonnes), „equal rights to emission“ would imply the emission of 5 tonnes per capita. Reducing carbon dioxide emissions globally by 50-60% for ecological reasons would, at given population, entail a reduction of this figure to 2.3 tonnes. However, Germany's per capita emissions, for instance, amounted to nearly 12 tonnes in 1994. Meeting the virtual target of 2.3 tonnes would involve cutting emissions by 80% by the year 2050. If the current forecast of a world population of around 10 billion by 2050 is added, then adherence to the principles of ecology and equity would imply bringing down fossil energy use by 90%, which equals a factor of 10.

3. Resource productivity as the critical factor

It is in the light of this perspective that the objective of sustainability, as far as industrialized countries are concerned, can be reformulated as the capability for creating human welfare with an ever diminishing amount of natural resources. In contrast to an emission-centred environmental policy, what matters most for a resource-centred environmental policy is the overall volume of material input, not so much the pollutants in the output (Schmidt-Bleek 1994). After all, the average German consumes about 80 tons of energy and materials annually and the average Dutch or US-American even 3-7 tons more (Adriaanse et al. 1997, 12). These megatons of materials and energy are presently being mobilized, at home or in distant countries, for keeping the entire volume of goods and services on offer. It is these resource requirements which put pressure on biospherical sources and sinks including the people connected to them. For a resource-centred approach, not a clean but a lean economy is the implicit utopia of sustainability.

Enhancing resource productivity is the art of making wealth creation increasingly less dependent on resource use. The concept of resource productivity, it should be noted, merges two ambitions contained in the sustainability idea into one formula; it calls for a considerable reduction in resource use, while aiming at economic and social well-being at the same time. However, not all elaborations of the concept do full justice to the richness of its meaning. Two different lines of inquiry may be distinguished. First, attention can focus on improving the ratio of economic output to the input of natural resources in all sectors of society. Framed in this way, resource productivity serves as a conceptual instrument for analyzing the relationship of natural inputs to other factors of production such as labour, technology, or capital and calls for rebalancing this relationship to minimize the amount of nature used. Second, attention can focus on improving the ratio of overall satisfaction to material output. Framed in this way, resource productivity serves as a tool for analyzing the relationship between quality of life and material goods and services, examining the productivity of material goods in terms of use value, welfare, beauty and meaning. Both approaches enhance resource productivity, both aim at a de-materialization of the economy. While the first tends to concentrate on improving means and their allocation (efficiency in resources), the second tends to focus on improving results and their quality (sufficiency in resources). In other words, while the first approach aims at doing things right, the second aims at doing the right things.

4. Decoupling economic output from resource flows

Increasing resource productivity through enhancing the ecological efficiency of technologies and organizational structures is a perspective which aims at reducing the volume of resource input per unit of economic output. At the horizon lies the hope of being able to steer the economy onto a course where monetary economic growth as well as a certain degree of social security is maintained, while the overall level of resource flow decreases (Weizsäcker et al.

1997). Such a strategy can - at least in the beginning - build on a tendency towards a relative decrease in resource use which emerges in the transition from industrial to post-industrial economies. Indeed, during the last twenty years, leading OECD countries experienced only a slight increase in the absolute level of resource flows, while the resource intensity per unit of GNP in general showed a modest decline (Adriaanse et al.1997). This process, however, can hardly be expected to persist under conditions of conventional economic growth; in recent years, a certain re-linking appears to be taking place (Opschoor 1997). In any event, full-scale dematerialization in the order of magnitude of „factor 10“ would require a continuous decrease in absolute volumes of non-renewable resources, particularly energy. For this reason, only pro-active change on many levels can bring about a dematerialization of industrial economies.

4.1 Eco-intelligent production systems

Modern systems of production still operate on the hidden assumption that nature „out there“ will be forever abundant. This assumption is a legacy from the early nineteenth century when economic activity was miniscule with respect to the annually renewed wealth of nature. Considering nature abundant, economists built theories which located wealth creation in the increasing productivity of labour, disregarding losses incurred by nature. As a consequence, progress largely meant substituting technology - driven by natural resources - for labour, expanding labour productivity at the expense of resource productivity in the process. As late as between 1960 and 1995 labour productivity rose in Germany by a staggering 200%, while the productivity of energy use lagged behind with an increase of only 31% (Statistisches Bundesamt 1998). However, as the environmental crisis has revealed the scarcity of nature, the direction of technological progress is bound to change. Under the new historical conditions it will be geared towards boosting resource efficiency rather than labour efficiency. As a consequence, managerial excellence will include the ability to design products, services, and production systems which create value with ever less input of non-renewable and, in part, renewable resources.

First of all, resource productivity calls for making different products. Each product constitutes a claim on resources; products may therefore be made in such a way as to minimize resource content, utilize biodegradable materials, extend durability, and save inputs during use. For instance, eco-efficient innovation (Fussler 1996) some years ago has reduced the volume of detergent needed for a given level of laundry power. While customers previously carried home bulky barrels of detergent, they have now the same service contained in small packages. The second aproach can be exemplified by a credit card made out of plant starch and plant sugar.

The third approach aims at increasing the longevity of products by making those parts interchangeable which wear out quickly or are subject to fashion. The modular office chair, for instance, consists of structural elements including the mechanics of the seat and visible elements such as cushions and cloth (Stahel 1994). The first elements are built to maximise durability, the second to maximise recyclability. Finally, long-term consumption goods, in particular energy-driven machines for households can be designed as low-input machines. Energy-efficient cars or electrical appliances are cases in point.

Furthermore, with regard to production processes, the crucial step is to move from the nineteenth century conception of a linear throughput growth, in which materials flow through the economy as if through a straight pipe, to a closed loop economy where as many materials as possible are fed back into the same or another production cycle. One way to close cycles is to fully utilize the entire throughput, thereby producing as little waste as possible (Pauli 1998). Examples abound. Juice makers may utilize lemon peels for perfume instead of throwing them away, chip manufacturers may reutilize waste water along with treatment chemicals, power producers may co-generate electricity along with heat for industrial or residential purposes. In the same vein, ecological agriculture attempts to close the loops between plants and soil as well as between plant cultivation and animal raising, thereby, among other things, adopting farming and forestry practices that release less carbon from the soil. In the energy sector, full use strategies may imply fuel-switching and a new generation of smaller, but highly efficient power plants. Moreover, decarbonizing energy production systems will eventually rely on the broad availability of photovoltaic modules, wind generators, small hydropower and biomass conversion plants (LTI-Research Group 1998). This logic is carried further with much more ambitious attemps to set up industrial clusters which are modelled after ecological food webs. Just as in an eco-system waste produced by one species turns into food for another, so in an industrial cluster the waste products of one industry become the raw material for another. Such an arrangement is often referred to as „industrial ecology“ (Tibbs 1992, Graedel et al. 1995).

4.2 Products to services

For conventional wisdom, business caters to the demand of consumers by offering products in ownership. The focus on ownership, however, impedes system-wide responsibility on part of the company for the entire life-cycle of its products. It encourages more throughput rather than optimal management of stocks. Shifting the entrepreneurial focus from the sale of hardware to the direct sale of the services through leasing or renting would make the full utilization of hardware, including maintenance and recycling, profitable. For example, *Rank Xerox Corp*. has moved from selling products to selling functions. Photocopiing machines are not sold but leased, and the customer pays for the amount of copies required. Such an arrangement changes the strategic interest of the company. The firm now profits from managing its assets carefully through repair services, upgrading or re-manufacturing.

A comparable shift in entrepreneurial strategy is the transition from energy production to energy services (Deutscher Bundestag 1995). Energy companies move into the business of demand-side management, selling consulting and managerial services for saving energy rather than focussing exclusively on the expansion of energy supplies; they construct „nega-watt power stations“ (Hennicke-Seifried 1996). Similar logic may hold for mobility infrastructures. The mobility service customers desire is easy access at least cost, not necessarily more cars and more roads. In the short run, mobility service enterprises may help to optimize the modal split; in the long run, they may promote efficient community design. Generally speaking, in an environmental service economy money does not flow for adding as much hardware as possible to the world, but for providing a particular service to customers through the temporary use of a piece of hardware. As producers turn into providers, and consumers into users, the eco-efficient design, management and disposal of material assets may become part of the economic logic.

4.3 Green Markets

Some moves towards eco-intelligent production and services are already today, under present conditions, economically profitable. However, for bringing economic rationality progressively more in line with ecological rationality, a change in the macro-economic framework is indispensable. As long as natural resources, including energy, are undervalued in relation to labour, there is the tendency to substitute the cheaper factor for the more expensive one. This tendency has stimulated labour-saving technical progress over decades, leading to the overconsumption of natural resources and eliminating jobs in the process. Therefore, the incentive structure offered by market prices needs to change for giving a boost to efficiency markets.

Above all, this would require eliminating environmentally counterproductive subsidies. Hundreds of billions of dollars of tax revenue are annually diverted to promote inefficient and unproductive material and energy use. These include subsidies to fossil fuels, motorized transport or pesticides, as well as concessions for logging and water extraction (Roodman 1996). Reforming environmentally destructive incentives will reduce a major source of price distortions which tilt the playing field against the environment and the economy at the same time (Paleocrassas 1999). Furthermore, shifting the tax base from labour to natural resources could begin to rectify the imbalance in factor prices (European Environment Agency 1996, Hammond et al. 1997). After all, long-term scarcity and limits to the environment's absorptive capacity are strong reasons for artificially raising resource prices. As far as possible, the user of resources should pay the full costs to society, to the environment, and to future generations. The introduction of a general tax on energy - and eventually also on materials - along with a reduction of direct and indirect levies on labour would bring down the demand for natural resources and increase the demand for labour. However, such a reform of the fiscal basis of the state would have to fulfil two conditions. First, it would have to be introduced progressively, for example at an annual rise of 5% over 15 years. For only an incremental rise over many years would allow enough time for redirecting investment decisions. Second, overall tax revenue should not grow; in particular levies imposed on labour for social security could be decreased in compensation.

5. Decoupling quality of life from resource flows

Overall resource productivity in society may also be enhanced through creating more, or a different, quality of life out of a given set of natural inputs. Such a perspective starts from the insight that, beyond a certain threshold, there is no clear link neither between the level of GNP and quality of life nor between the level of GNP and satisfaction (Linton 1998, UNDP 1998). Monetary income - on the individual as well as on the collective level - needs to be distinguished from quality of life, which comprises both subjective and objective variables. On the subjective side, quality of life refers to personal satisfaction, which in part depends on shared narratives and institutional values. On the objective side, it refers to opportunity structures, which - next to purchasing power - may include access to nature, participation in community, availability of non-market goods, or public wealth. As there is no objective way to deal with issues such as needs and desires, habits and rules, institutions and world-views, it is at this point that - next to sciences, engineering, and economics, providing a descriptive approach - the humanities, offering an interpretive approach (Rayner-Malone 1998), would have to join the research on resource productivity. No doubt, a full appreciation of resource productivity in the second, the qualitative sense, calls for a debate on civilizational change, rather than for a debate on technological change. Such a debate moves to the center of the stage if the search for ecological sustainability is to be linked to the search for social sustainability. The core questions are as follows: does quality of life necessarily increase with a high level of resource flows? Is it possible that resource limits can be turned into new opportunities for quality of life?

Such questions can hardly be avoided because the efficiency-centred strategy of enhancing resource productivity is likely to run into a dilemma. Efficiency-centred strategies raise the prospects of enormous gains, but fail to account for the long-term effects of economic change. Numerous cases of less resource use on the micro level do not automatically translate into less resource use on the macro level. Paradoxically, it is often precisely the economic gains from improved technical efficiency that increase the rate of resource throughput. Cars, for instance, are considerably more fuel-efficient today than they were twenty years ago, but the increase in the numbers of cars, in their size and power, and the number of kilometres driven has long eaten up that gain. Similar examples abound. In fact, increased efficiency has been driving competition and growth for a long time; per unit gains facilitate new rounds of expansion. Therefore, efficiency gains on the micro level are - over time - likely to be eaten up by volume effects on the macro level if material growth continues. Indeed, the paradoxical situation that ecological efficiency rises on the micro level, while the ecological efficiency of the economy as a whole diminishes, seems to be a recurrent pattern of economic development.

Therefore, a transition towards sustainability in industrial societies requires a twin-track strategy. It is achieved through both an intelligent reinvention of means as well as a prudent moderation of ends. Such a conclusion is not astonishing within a co-evolutionary perspective (Norgaard 1994). In this perspective, socio-cultural forms evolve in interaction with technical forms, just as technical forms evolve in interaction with socio-cultural forms. The emergence of a low-input/high-quality technology may therefore go hand in hand with the emergence of a low-input/high-quality society - and the other way around.

5.1 Intermediate speeds and distances

"Faster", "further" - as well as "more" - can be considered the main themes of fossil-powered progress. Trains, limousines and jets promised high speed; and railway lines, motorways, and airroutes easy passage. Indeed, the assumption that higher speeds are always better than lower ones has prevailed until the present day. Correspondingly, the assumption that progress would imply increasing permeability of space is equally widespread. However, the mobilization of space and time requires the mobilization of nature. Fuels and vehicles, roads and runways, electricity and electronic equipment, call for gigantic flows of energy and materials. In fact, transport systems in the North are major sources - and the fastest growing sources - of carbon dioxide emissions; yet they have turned out to be the most intractable issue of climate policy. The drift towards higher speeds and large-scale interconnection is - efficiency gains notwithstanding - unlikely to be environmentally sustainable in the long run. Moreover, it is even unlikely that this drift enhances the quality of life.

Transport is a good example for illustrating that growth in quantity may - after a certain point - have diminishing returns in quality (Hirsch 1976; Wachtel 1994). First of all, satisfaction largely depends on the level of expectation. Expectations, however, keep rising, in particular because they tend to be determined by the individual's relative position in the social network. If more goods just serve to maintain the relative position, no higher satisfaction is to be expected. Most advantages of the car, for instance, are relative advantages; they may remain stable or even decline when car ownership spreads. Secondly, growth in quantity may actually undermine some of the more fundamental sources of satisfaction and quality of life, such as friendship, community participation, security, or beauty. Again, it is obvious how the modern transport regime has contributed to weakening these sources of well-being. Thirdly, growth in quantity breeds its own requirements, creating conditions of scarcity which impose further participation in growth on people. In a fully motorized society, for instance, the acquisition of one or more cars is often not a choice, but a sheer necessity (Sachs 1992). In short, disillusionment is built into the process of mass motorization. This shift in the emotional base of motorization is an important ingredient in the search for an environmentally sound means of transport.

Speed is also a critical factor in ecology. Even gains in fuel efficiency will not cancel out the basic law which governs the physics of speed: for acceleration, growing amounts of energy are required to beat friction and air resistance. It is unlikely that a society which always moves in the fast lane can ever become sustainable (Plowden-Hillman 1996). Creating a resource-light economy could therefore imply deliberately designing cars and trains for intermediate top speed levels, giving rise to a new generation of moderately motorized vehicles. For such cars, down-sized as they would be in power and top speed, standards for safety or for aerodynamics would then play a minor role. They could be of light, material-saving construction, comfortable in height and size, and innovative in engine design. Eco-technology is lean technology in this sense; it combines sufficiency in performance levels with state-of the-art efficiency in all components.

Likewise, geographical scale is a critical factor in ecology. Production and lifestyles based on high volumes of long-distance transportation carry an unsustainable load of energy and raw materials. For example, a simple German carton of yoghurt travels around 9,000 km before it reaches the consumer, taking into account the transport of all its component parts and ingredients (Böge 1993). It may therefore become critically important for a low-input society that the economy evolves in a plurality of spaces, where markets that revolve around „regional sourcing“ and „regional marketing“ can co-exist with markets that focus on „global sourcing“ and „global marketing“. In any case, a „factor 10“ environmental policy will focus on avoiding traffic, not on optimizing transport structures (Whitelegg 1993). Slower vehicles, less negotiable routes, and higher monetary costs lead to fewer journeys and shorter distances - and thus less traffic. Designing transport-saving economic structures requires an emphasis to be put on shorter distances, thereby favouring regional density over long-distance connections. For reasons of both ecology and community well-being, strategies of regional sourcing and regional marketing are probably particularly important for things like food, repair, and human services. Moreover, solar power, which relies on the widespread but diffuse resource of sunlight, may be best developed when many operators harvest small amounts of energy, transforming and consuming them at close distance. A similar logic holds for biomass-centred technologies. Plant matter is widely available and heavy in weight; it is best obtained and processed in a de-centralized fashion (Morris 1996). There is reason to believe that a resource-light economy will be in part a regionalized economy.

5.2 Wealth in time rather than goods

In affluent societies time rather than money is the good that is lacking at the end of this century - at least among the broad middle classes. For some of these groups, the marginal utility of increased purchasing power is decreasing with respect to the marginal utility of more free time. In such a situation, the long-standing assumption that well-being would increase parallel to purchasing power may begin to lose validity. A development path can be envisaged where having less money may be in part traded off against having more freely available time. Such a path is likely to be environmentally beneficial and promises to increase quality of life at the same time.

However, in most industrial societies increases in economic productivity were for the most part converted into higher wages and/or increased production - and thus consumption of resources - leaving only a smaller part available for the increased freedom from the necessity to work. This pattern has been particularly reinforced by the rigidity of working time - and connected income levels - in most societies; regular work for a long time meant an eight hour day, five days a week, life-long job (Sanne 1993). Despite all their freedom to consume, people rarely had one fundamental option: the possibility of deciding how much time they wanted to work - and, correspondingly, how much they wanted to earn. As income levels are fixed, spending power tends to determine the level of consumption. In the process, a "work and spend" cycle (Schor

1995) ensues where rising but invariable incomes leave no other option, apart from saving, than to increase consumption. Simply put, the broad middle classes unlearn to ask how much money they should earn for their needs, and instead get used to pondering what needs they can afford by spending the money they earn. From this point of view, the lack of individual freedom of choice over working time emerges as a powerful incentive for the expansion of consumption in society.

However, it is not unlikely that, if they had the choice, a considerable number of people would prefer to work less for a lower income. In terms of well-being, gaining time can compensate for loss of income, opening room for satisfying pursuits outside of the market sphere. Such lifestyle options could be stimulated by the principle of sovereignty over one's own time - the much more extended right to choose the length of one's working periods. Such a principle would not only be socially welcomed for mitigating the employment crisis, but also ecologically welcomed for moderating spending power. In any case, „economic under-achievers“ (Schor 1998) may ultimately be of crucial importance for transition to a sustainable economy. These are people who choose to live below their economic possibilities, uninterested in mounting volume of consumption, but eager to pursue their own projects in life. In addition, such economic under-achievers may help to give rise to a sector of reciprocity and civic life, whose qualities may in part compensate for a certain decline in the output of material goods.

Selective consumption

With the rise of the consumer society in 19th century England, a redefinition of the meaning of human happiness took hold, which today is becoming questionable in environmental as well as social terms. The growing volume of objects for thousands of needs makes sense only in the context of a world-view which sees happiness increase along with larger quantities of goods. However, sustainable consumption patterns will not only have to be of different composition, but also of reduced volumes. For this reason, it becomes necessary to explore the relationship between quantity of consumption and quality of life. More specifically, it becomes essential to assess the space available for individuals to enhance their personal resource productivity, which could be defined as the ability to maintain/increase satisfaction with a lower input of resources.

As it turns out, the promise of growing happiness with growing consumption is fraught with uncertainties. Currently, there is not much empirical evidence that - beyond a certain threshold - the assumed correlation between increased consumption and well-being holds true. Research into the psychology of happiness can neither find within nor between societies that levels of satisfaction significantly increase with levels of wealth (Argyle 1978). After a certain minimum, the less well-to-do are not unhappier than the rich. Moreover, in developed consumer societies the consumer’s relationship with the product becomes often volatile and unclear (Schulze 1993). In fact, in a multi-option society people suffer less from a lack but from an excess of opportunities. While well-being is threatened by a shortage of means in the first case, it is threatened by a confusion about goals in the second. The proliferation of options makes it increasingly difficult to know what one wants, to decide what one does not want, and to cherish what one has. Many people feel overburdened and constantly under pressure; in the maelstrom of modern life they tend to lose their clarity of purpose and determination of will. Apart from giving rise to all kinds of personal problems, such a condition tends to undermine well-being in post-industrial societies.

Furthermore, time may become a limiting factor for the enjoyment of good and services. Even the most valuable objects and the most interesting appointments unavoidably gnaw away at the most restricted of all resources: time. The number of possibilities - goods, services, events - has exploded in affluent societies, but the day in its conservative way continues to have only 24 hours, so a hectic pace and stress have become characteristic of everyday existence. Scarcity of time has begun to undermine the benefits derived from increasing quantities of goods and services. Looked at more closely, it is possible to say that well-being has two dimensions: the material and the non-material (Scherhorn 1995). Material satisfaction is obtained by acquiring and utilizing certain objects or materials, e.g. buying food and eating a multi-course meal will satisfy the need to fill the stomach. Immaterial satisfaction stems from the way in which the object and materials are used; e.g. enjoying Italian cooking and convivial company over dinner gives another dimension of pleasure. Similar to food items, many objects achieve their full value only when they are put to use, enjoyed, and cultivated. However, and this is the dilemma, obtaining immaterial satisfaction calls for attention, demands involvement, and requires time. The conclusion is obvious. Having too many things makes time for non-material pleasure shrink; an overabundance of options can easily diminish full satisfaction. In other words, material and non-material satisfaction cannot be maximized simultaneously; there is a limit to material satisfaction beyond which overall satisfaction is bound to decrease.

Selective consumption, however, allows the pursuit of quality. It is a strategy of personal conduct which, apart from saving resources, may become a key to well-being in post-industrial societies. In an age of exploding options, only self-reflective consumers will be able to maintain their identity; the ability to focus, which implies the ability of discarding, becomes an important ingredient in creating a richer life. Against this backdrop, consciously cultivating a lack of interest in excessive consumption may become a future-oriented attitude, for nature, for the world, and for oneself.

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